

WHAT IS CLAIMED IS:

1. A manufacturing method of a circuit board comprising a plurality of elements each having a resistor layer formed on an insulative surface of the substrate and a pair of electrodes formed on said resistor layer at a predetermined interval, comprising:

(a) a step of sequentially laminating a resistor material layer for forming said resistor layer and an electrode material layer for forming said electrodes in this order on the insulative surface of said substrate;

(b) a step of forming a resist layer (I) having a pattern for separating said elements from each other on said electrode material layer;

(c) a step of patterning said resistor material layer and said electrode material layer by dry etching on the basis of the pattern of said resist layer (I) and forming a laminated structure in which said electrode material layer has been laminated on said resistor layer;

(d) a step of removing the resist layer (I) on said laminated structure;

(e) a step of forming a resist layer (II) having a pattern for forming said interval;

(f) a step of patterning said electrode material layer by wet etching on the basis of the

pattern of said resist layer (II), forming said interval, and forming said elements; and

(g) a step of processing a surface portion of said electrode material layer so that an etching
5 speed of the surface portion is made higher than that of the material forming said electrode material layer at least before said step (e).

2. A method according to claim 1, wherein said
10 electrode material layer comprises aluminum as a main component.

3. A method according to claim 1, further comprising a step of removing an aluminum oxide of a
15 surface portion on the resist layer (II) side of said electrode material layer.

4. A method according to claim 1, wherein said steps (d) and (g) are simultaneously executed.

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5. A method according to claim 1, wherein said step (g) is a process for forming at least one selected from a fluoride, a chloride, and a nitride of the material forming said electrode material layer
25 into the surface portion on the resist layer (II) side of said electrode material layer.

6. A method according to claim 1, further comprising a step (h) of forming a protective layer so as to cover at least said element after said step (f).

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7. A method according to claim 6, wherein said protective layer is thinner than said electrode material layer.

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8. A method according to claim 6, wherein a ratio of said protective layer and a wiring layer is set to $1 \leq \frac{\text{wiring layer}}{\text{protective layer}} \leq 2$.

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9. A manufacturing method of a circuit board comprising a plurality of elements each having a resistor layer formed on an insulative surface of the substrate and a pair of electrodes formed on said resistor layer at a predetermined interval, comprising:

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(a) a step of sequentially laminating a resistor material layer for forming said resistor layer and an electrode material layer for forming said electrodes onto the insulative surface of said substrate in this order;

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(b) a step of forming a resist layer (I) having a pattern for separating every said element onto said electrode material layer;

(c) a step of patterning said resistor material layer and said electrode material layer on the basis of the pattern of said resist layer (I) and forming a laminated structure in which said electrode material layer has been laminated onto said resistor layer;

(d) a step of removing the resist layer (I) on said laminated structure;

(e) a step of forming a resist layer (II) having a pattern for forming said interval; and

(f) a step of patterning said electrode material layer by wet etching on the basis of the pattern of said resist layer (II), forming said interval, and forming said elements,

wherein the step of removing said resist layer (I) is ashing using gases containing at least fluorine and is a step of removing at least either an incinerated substance of said resist layer (I) or a compound of said electrode material layer formed on a surface of said electrode material layer after said ashing.

10. A circuit board comprising:

a plurality of elements each having a pair of electrodes formed at a predetermined interval onto a resistor layer formed on an insulative surface of the substrate; and

a protective layer formed on said element,

wherein one of a fluoride, a nitride, and a chloride of the material forming said electrodes is formed in an interface between said electrodes and said protective layer.

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11. A circuit board according to claim 10, wherein at least one of the fluoride, the nitride, and the chloride of 5 at% or more exists in said interface.

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12. A circuit board according to claim 10, wherein a ratio of said protective layer and a wiring layer is set to $1 \leq \frac{\text{wiring layer}}{\text{protective layer}} \leq 2$.

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13. A liquid discharging apparatus for discharging a liquid by using heat generated by an electrothermal converting element, comprising:

the circuit board according to claim 10;

20 discharge ports provided in correspondence to said elements;

an enclosing container for enclosing the liquid which is supplied onto said elements; and

25 a power source circuit for supplying a power voltage to said circuit board.